ABSTRACT

A manipulator for a fiber optic cable assembly (FOCA) provides microradian accuracy in control of the direction of a beam emanating from the FOCA. Such manipulators can control FOCAs to control the incidence angles of beams at a beam combiner in a beam-combining unit. Accordingly, fewer additional optical elements are required for control of input paths in the beam-combining unit. The manipulator and the beam-combining unit are accurate enough for use in an interferometer that combines beams with different frequencies and polarizations. One such interferometer includes a Zeeman split laser providing a heterodyne beam. A beam splitter separates frequency components of the beams, and AOMs increase the frequency separation between the separated beams. The separated beams can be sent via optical fibers to the beam-combining unit, which combines the beams for use in interferometer optics.